

*Oenothera cespitosa*

Gumbo Evening Primrose

by Kathy Lloyd, Montana Native Plant Society

Gumbo evening primrose, or *Oenothera cespitosa* (also spelled *caespitosa*) as it is known in the botanical world, was collected on July 17, 1806 in present-day Cascade County near the Great Falls of the Missouri. Meriwether Lewis collected the plant as he made his way toward the Marias River to ascertain its source. Although it is not specifically mentioned in his journal, Lewis could have collected it in the vicinity of the Great Falls or near the Teton River later that day. A few days earlier, on July 13, Lewis had the cache left at White Bear Island uncovered and discovered that all of his plant specimens were destroyed. It was exactly one year since they had been buried, waiting to be retrieved on the return trip. Lewis must have been extremely disappointed and may have been replacing a specimen collected earlier. The gumbo evening primrose specimen he collected was in flower and would most likely have been in flower the previous year, undoubtedly catching Lewis's attention as he surveyed the area around the Great Falls. On July 18, 1806, Sergeant Ordway arrived at the Great Falls bringing canoes down the Missouri. Had Lewis remained at the Great Falls two more days, he would have heard from Ordway the equally bad news that all the plant specimens but one had been destroyed in the cache left at Camp Fortunate. As it was, Lewis did not do much more plant collecting in Montana. He was busy making a hurried trip to the Marias, and an even more hurried trip back to the Missouri as he fled from Blackfoot warriors.

There are two specimen sheets of gumbo evening primrose in the Lewis & Clark Herbarium in Philadelphia today. One carries a label applied to the sheet by the botanist Frederick Pursh that reads, "Near the Falls of Missouri. Jul. 17th 1806." This sheet is on permanent loan to the Academy of Natural Sciences from the American Philosophical Society. The second sheet contains a Pursh label that says, "*Oenothera aborvitata*["?] Near the falls of Missouri Jul. 17th 1806." Pursh, in his 1814 publication *Flora Americae Septentrionalis*, called this species *Oenothera scapigera*, but because of nomenclatural rules, the name *cespitosa* is now applied. The back of the specimen sheet has another label, "1 Louisiana. Bradbury. 2 America Herb: Lewis & Clarke. Fred: Pursh." This sheet contains specimens that traveled with Pursh from Philadelphia to London and were stored in the herbarium of his benefactor, A. B. Lambert. When Lambert died, his collection was purchased by an American, Edward Tuckerman, who brought the collection back to the United States and eventually donated it to the Academy of Natural Sciences. It is believed likely that this sheet also contains specimens that were grown from seeds collected by Thomas Nuttall in 1811.

Although Lewis doesn't mention gumbo evening primrose by name, he does talk about the soil found in the area of the Great Falls, "the land is not fertile, at least far less so, than the plains of the Columbia or those lower down this river, it is a light coloured soil intermixed with a considerable proportion of coarse gravel without sand, when dry it cracks and appears thirsty and is very hard, in it's wet state, it is as soft and slippery as so much soft soap." The gumbo described by Lewis is all too familiar to hikers and travelers caught in the area after a rain.

Gumbo evening primrose is a perennial member of the evening primrose family (Onagraceae). It grows in low tufts usually less than one foot tall. In fact, the species name *cespitosa* means tufted. The plant has a thick taproot and lateral roots may give rise to new shoots. The leaves are about an inch wide and may be as long as six inches. The leaves are broader at the tip, and taper toward the base. They may be coarsely or irregularly toothed. The flowers have four petals and four sepals and grow close to the ground among the leaves. True to their name, the large, solitary white flowers open at dusk and have a sweet, almost rubbery fragrance. The flowers generally remain white for only a day, and then begin to fade. As they age, the flowers turn a rose-purple color, and you may see both white and pinkish flowers on the same plant. The flowers and their sweet odor attract nocturnal hawk moths and sphinx moths that pollinate the plant and perpetuate the species.

Lewis collected gumbo evening primrose in typical habitat. It grows on dry, rocky or gravelly prairie hillsides, along road cuts, in sandy places and on ridges. It doesn't seem to mind unstable, slipping soil and may be beneficially employed to hold soil in place on hillsides. Gumbo evening primrose and its varieties occur over much of the western United States and in Manitoba and Saskatchewan, Canada, where they are considered rare. The plant is also rare in Washington.

As with so many native plants, gumbo evening primrose was employed by native tribes for medicine. The Blackfoot of Montana used a root poultice to aid swellings and sores. Indians of the American Southwest used a poultice of the ground plant for a prolapsed uterus. They also used the plant ceremonially. Modern research has shown that oil extracted from evening primrose seeds is effective in treating atopic eczema, premenstrual syndrome, alcoholism, high cholesterol levels, scleroderma and mild hypertension. The oil contains gamma-linolenic acid and linoleic acid.

A relative of gumbo evening primrose, *Oenothera biennis*, has been used for food and was cultivated in Europe for food. The root was dug in the fall or early spring and reportedly tastes similar to parsnips. The basal leaves can also be used as a potherb, but may be bitter in taste. Other species of evening primrose, including *Oenothera cespitosa*, may also be edible, but have not been specifically reported. In any case, it is best to enjoy our native plants in their native settings and not in the kitchen.

We can remember Lewis who took the time to make a collection of the plant as he hurried to complete his mission on the Marias River. And we can be mindful of the threats to gumbo evening primrose habitat and join efforts to preserve Montana's native prairie.